

The Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 2017

A Significant Reshuffling Of Vendor Positions In A Changing Landscape

by Boris Evelson and Martha Bennett
September 11, 2017

Why Read This Report

In our 22-criteria evaluation of enterprise business intelligence (BI) platforms with majority on-premises deployments providers (that also have cloud deployment options), we identified the 15 most significant ones — BOARD International, IBM, Information Builders, Looker, MicroStrategy, OpenText, Panorama, Pyramid Analytics, Qlik, SAP, SAS, Sisense, Tableau Software, TIBCO Software, and Yellowfin — and researched, analyzed, and scored them. This report shows how each provider measures up and helps AD&D pros working on BI initiatives make the right choice.

Key Takeaways

MicroStrategy, IBM, TIBCO Software, And Qlik Lead The Pack

Forrester's research uncovered a market in which MicroStrategy, IBM, TIBCO Software, and Qlik lead the pack. Information Builders, Looker, Pyramid Analytics, Tableau Software, SAP, OpenText, Yellowfin, Sisense, and SAS offer highly competitive options.

AD&D Pros Are Looking To Help Their Insights Pros Select The Right BI Platforms

The BI market is growing because more enterprises use information as a key competitive differentiation. This market growth is in large part due to the fact that AD&D pros working on BI initiatives increasingly trust enterprise BI platform providers to act as strategic partners, advising them on top data-to-insights decisions.

It's Getting Harder To Find Significant BI Platform Differentiators

As key BI platform features like querying, reporting, and data visualization become table stakes, a new set of differentiating criteria — such as new types of human-to-machine interactions, insights-to-execution capabilities, and others — will dictate which providers lead the pack. Vendors that can innovate beyond the commoditized BI platform features will become more popular with customers.

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Related Research Documents

- [The Forrester Wave™: Enterprise BI Platforms With Majority Cloud Deployments, Q3 2017](#)
- [TechRadar™: Business Intelligence Technologies, Q2 2017](#)
- [Vendor Landscape: Forrester's 13-Step Methodology For Shortlisting BI Vendors](#)



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BI Is A Key Enabler Of Insights-Driven Businesses

Forrester predicts that insights-driven businesses will take \$1.8 trillion from their competitors that are still running their companies by data rather than by insights and the resulting business outcomes.¹ While the former are still extremely important, they are not enough in today's highly competitive global economy. To become insights-driven, businesses must foster multiple disciplines, best practices, and technologies — and BI plays a key role. Forrester defines business intelligence as:

A set of methodologies, processes, architectures, and technologies that transform raw data into actionable insights to enable more effective strategic, tactical, and operational decision making.

BI can be deployed as a standalone decision-support application or embedded into operational systems of record, automation, and engagement. It includes components such as querying, reporting data visualization, data discovery, dashboards, scorecards, and exploration as well as descriptive, predictive, and prescriptive analytics.²

It's Not Your Old-School BI Landscape Anymore

BI technology (along with all related ones, such as big data and artificial intelligence) has evolved at lightning speed over the last two years. The vendor segmentation that Forrester used in 2012 and 2015 to evaluate BI platform capabilities no longer holds.³ To address this evolved technology landscape, we have completely realigned our BI platforms evaluation and now:

- › **Treat enterprise versus self-service and agile BI as one category.** For about three decades until approximately two years ago, enterprise BI platforms (e.g., IBM Cognos and SAP BusinessObjects), while highly scalable, required technology professionals to develop most of the BI content. Conversely, end-user-focused BI platforms, which became popular in the early 2000s (e.g., Qlik and Tableau), empowered business users to produce most of their own BI content (reports, dashboards) with little to no reliance on tech pros. These newer platforms, however, did not scale beyond workgroups and departments. Vendors in these two categories did not sit on their laurels: Over the last several years they've addressed most of the missing functional and technology requirements in their product portfolios. As a result, all earlier-generation enterprise BI vendors now offer end-user-centric capabilities (built into the same platform or as separate tools). And the newer end-user-focused vendors innovated on acquired technologies and capabilities that let them scale across large enterprises.
- › **Do not consider data visualization as a separate market segment.** Until a few years ago, Forrester saw a clear differentiation between BI platforms with mostly static reporting and visualization features and those with more advanced, dynamic, highly interactive data visualization.⁴ This is no longer the case — all leading BI vendors have acquired or developed advanced data visualization capabilities. Forrester now sees advanced data visualization as one of many capabilities of BI platforms, not a separate market segment.

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- › **Do not consider cloud BI as a separate market segment.** While some of the enterprise and agile BI platforms Forrester evaluated in 2015 had single-tenant cloud-hosting capabilities, they were not based on modern, cloud-native, multitenant architectures. Conversely, some of the cloud BI platforms evaluated in 2015 had very basic on-premises deployment capabilities. While most of the vendors evaluated in this Forrester Wave still deploy their BI platforms on-premises, they have developed modern cloud architectures and have some customers (albeit still less than 50%) deploying BI platforms in the cloud. For more information on what Forrester now sees as truly differentiating cloud and hybrid cloud capabilities, read [“The Forrester Wave™: Enterprise BI Platforms With Majority Cloud Deployments, Q3 2017.”](#)
- › **Assess only differentiated BI platform features.** Forrester now sees many BI platform features as table stakes and no longer uses them as evaluation criteria —including querying and reporting, data visualization, descriptive analytics, end user self-service, scalability, administration, and database connectivity. Read the later sections of this report (and download the associated detailed model spreadsheet) to learn what Forrester sees as current differentiated features.

Enterprise BI Platforms (Majority On-Premises) Evaluation Overview

To assess the state of the enterprise BI platforms with majority on-premises deployments market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top enterprise BI platforms vendors. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of 22 evaluation criteria, which we grouped into three high-level buckets:

- › **Current offering.** The evaluation strictly concentrated on highly differentiated features, not table-stakes ones. Forrester clients should feel confident that all vendors evaluated in this report support the commoditized features relatively equally. As a result, this evaluation concentrated on what we find are the current BI platform differentiators: actionable and suggestive BI; advanced (predictive, prescriptive, text) analytics; connectors to business applications (versus a database management system [DBMS]) and integration with competing BI platforms; data catalog and data governance features; data preparation and profiling; data visualization certification by an objective third party; advanced geospatial analytics like geofencing based on driving times; Hadoop/Spark-based architecture; on-chip computing; compliance and certification with standards bodies; and both read and write capabilities.
- › **Strategy.** We evaluated vendors’ focus on BI (as demonstrated by the percentage of their overall company revenue derived from BI software); their focus on a SaaS-based business model and cloud strategy (since Forrester feels this is the general market direction); percentage of revenue dedicated to BI R&D; and tangible BI intellectual property (IP), as demonstrated by patents filed and received.⁵ We also considered the number of global brand-name partners as part of the strategy criteria (although some other Forrester Wave evaluations use “partners” in the Market Presence section).

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- › **Market presence.** We determined the vendors' market presence based on the absolute revenue derived from BI; number of individual customer logos (direct and indirect, where each indirect channel client counted as a single client, regardless of how many of their clients deployed the BI software); and presence in all global regions.

Evaluated Vendors And Inclusion Criteria

Forrester included 15 vendors in the assessment: BOARD International, IBM, Information Builders, Looker, MicroStrategy, OpenText, Panorama, Pyramid Analytics, Qlik, SAP, SAS, Sisense, Tableau Software, TIBCO Software, and Yellowfin. Each of these vendors has (see Figure 1):

- › **Key foundational BI components.** Vendors must have a BI platform that is sold as a separate product, not embedded into a particular industry vertical or business-domain-specific application. The BI platform must be able to ingest, process, and analyze data from any data source. The platform should have all of the following components: querying, reporting, data visualization, dashboards, scorecards, data exploration and discovery, and descriptive analytics. Predictive and prescriptive analytics, increasingly popular features of BI leading platforms, were an evaluation, not an inclusion, criterion.
- › **The majority of BI revenues from on-premises deployments.** Vendors must derive more than 50% of their BI revenues from on-premises deployments. Since all of the evaluated vendors also have cloud deployment capabilities, cloud architecture was an evaluation criterion, but not an inclusion criterion. Forrester encourages clients to use this evaluation side by side with [“The Forrester Wave™: Enterprise BI Platforms With Majority Cloud Deployments, Q3 2017”](#) if they are mostly interested in deploying their BI applications in the cloud.

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FIGURE 1 Evaluated Vendors: Product Information And Selection Criteria

Vendor	Product evaluated
BOARD International	BOARD
IBM	IBM Cognos Analytics, IBM Watson Analytics, IBM SPSS Predictive Analytics
Information Builders	WebFOCUS
Looker	Looker
MicroStrategy	MicroStrategy
OpenText	OpenText Analytics Suite, OpenText Magellan
Panorama	Panorama Necto
Pyramid Analytics	BI Office
Qlik	QlikView, Qlik Sense
SAP	SAP BusinessObjects, SAP Analytics Cloud
SAS	SAS Visual Analytics, SAS Office Analytics
Sisense	Sisense
TIBCO Software	TIBCO Spotfire
Tableau Software	Tableau
Yellowfin	Yellowfin

Vendor inclusion criteria

Each enterprise business intelligence (BI) platform in this evaluation has:

- Key foundational BI components.** Vendors must have a BI platform that is sold as separate product, not embedded into a particular industry vertical or a business-domain-specific application. The BI platform must be able to ingest, process, and analyze data from any data source. The platform should have all of the following components: querying, reporting, data visualization, dashboards, scorecards, data exploration and discovery, and descriptive analytics. Predictive and prescriptive analytics, increasingly popular features of leading BI platforms, were an evaluation, not an inclusion, criterion.
- The majority of BI revenues from on-premises deployments.** Vendors must derive more than 50% of their BI revenues from on-premises deployments. Since all of the vendors in this Forrester Wave also have cloud deployment capabilities, cloud architecture was an evaluation, not an inclusion, criterion. Forrester encourages clients to use this evaluation side by side with the “The Forrester Wave™: Enterprise BI Platforms With Majority Cloud Deployments, Q3 2017” evaluation if they are mostly interested in deploying their BI applications in the cloud.

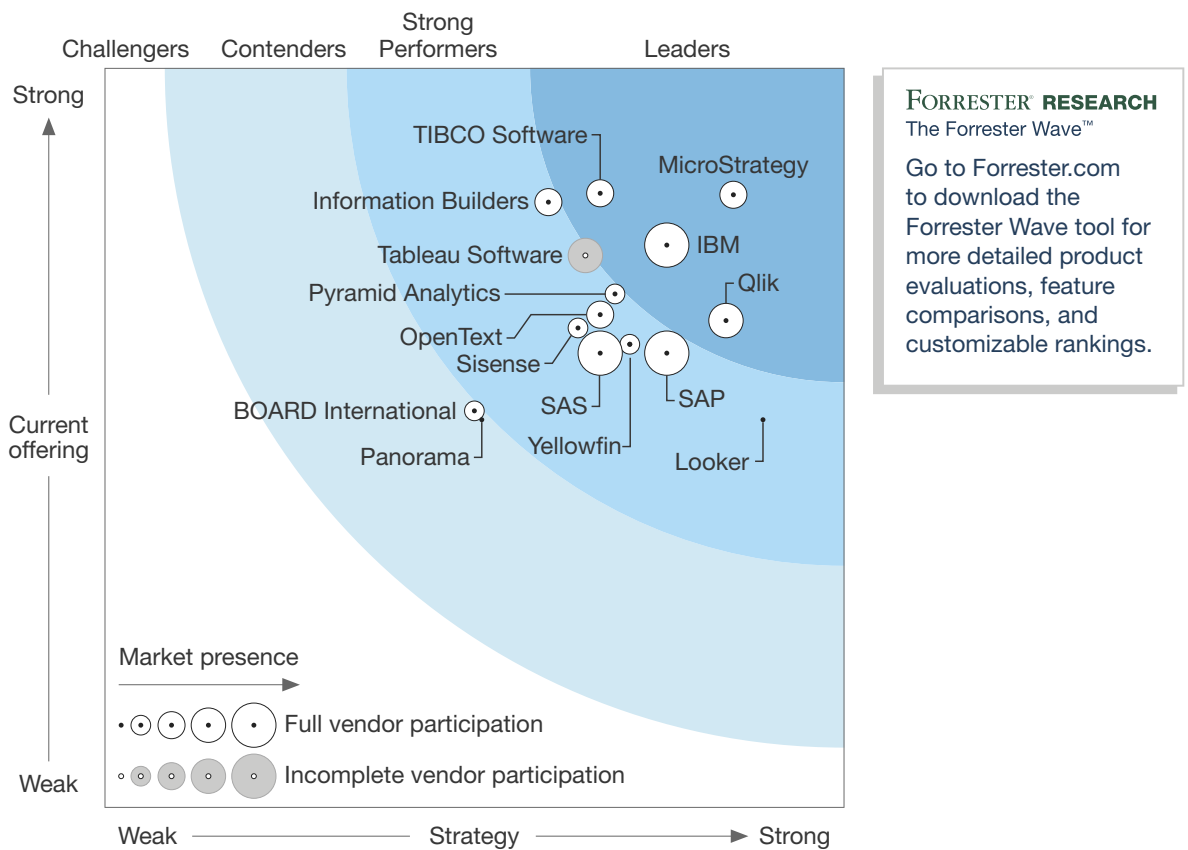
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Vendor Profiles

This evaluation of the enterprise BI platforms with majority on-premises deployments market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool (see Figure 2).

FIGURE 2 Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 '17



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FIGURE 2 Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 '17 (Cont.)

	Forrester's weighting	BOARD International	IBM	Information Builders	Looker	MicroStrategy	OpenText	Panorama
Current Offering	50%	2.67	3.79	4.08	2.61	4.13	3.32	2.61
Actionable and suggestive BI	2%	3.00	3.00	3.00	2.00	3.00	1.00	2.00
Advanced analytics	13%	3.00	4.00	5.00	2.00	4.00	4.00	2.00
Architecture	8%	3.00	4.00	3.00	1.00	4.00	3.00	2.00
Cloud/hybrid architecture	3%	3.00	4.00	4.00	4.00	4.00	3.00	3.00
Cross-product integration	10%	5.00	2.00	5.00	5.00	5.00	3.00	5.00
Data curation	2%	2.00	4.00	3.00	3.00	3.00	3.00	2.00
Data visualization/geospatial	5%	2.00	2.00	4.00	2.00	4.00	3.00	3.00
Ease of use	10%	2.00	4.00	4.00	4.00	4.00	4.00	4.00
Integration with other tools and applications	10%	2.00	3.00	3.00	2.00	4.00	1.00	2.00
Full BI stack	8%	3.00	5.00	5.00	3.00	5.00	5.00	3.00
Mobile	2%	3.00	4.00	4.00	2.00	4.00	2.00	2.00
NLG and NLP	8%	3.00	4.00	3.00	2.00	3.00	2.00	1.00
Security	6%	3.00	4.00	3.00	3.00	3.00	4.00	3.00
Text mining	8%	1.00	5.00	5.00	1.00	5.00	5.00	1.00
Upgrades	5%	1.00	5.00	5.00	3.00	5.00	4.00	3.00

All scores are based on a scale of 0 (weak) to 5 (strong).

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FIGURE 2 Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 '17 (Cont.)

	Forrester's weighting	BOARD International	IBM	Information Builders	Looker	MicroStrategy	OpenText	Panorama
Strategy	50%	2.50	3.80	3.00	4.45	4.25	3.35	2.55
Focus on BI	45%	4.00	3.00	4.00	5.00	5.00	3.00	4.00
Focus on SaaS/cloud	10%	2.00	2.00	2.00	4.00	2.00	2.00	2.00
R&D and IP creation	5%	2.00	5.00	4.00	4.00	4.00	4.00	3.00
Partners	40%	1.00	5.00	2.00	4.00	4.00	4.00	1.00
Market Presence	0%	1.40	5.00	3.00	1.00	3.00	3.00	1.00
Revenue	80%	1.00	5.00	3.00	1.00	3.00	3.00	1.00
Customer logos	10%	3.00	5.00	3.00	1.00	3.00	3.00	1.00
Presence in all global regions	10%	3.00	5.00	3.00	1.00	3.00	3.00	1.00

All scores are based on a scale of 0 (weak) to 5 (strong).

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FIGURE 2 Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 '17 (Cont.)

	Pyramid Analytics	Qlik	SAP	SAS	Sisense	TIBCO Software	Yellowfin
Current Offering	3.46	3.28	3.06	3.06	3.23	4.14	3.12
Actionable and suggestive BI	3.00	1.00	3.00	2.00	2.00	3.00	2.00
Advanced analytics	4.00	3.00	4.00	4.00	3.00	5.00	4.00
Architecture	3.00	3.00	3.00	2.00	3.00	4.00	3.00
Cloud/hybrid architecture	4.00	4.00	4.00	3.00	3.00	4.00	4.00
Cross-product integration	4.00	4.00	2.00	5.00	5.00	5.00	5.00
Data curation	3.00	3.00	3.00	3.00	2.00	4.00	3.00
Data visualization/geospatial	2.00	4.00	3.00	2.00	2.00	4.00	3.00
Ease of use	4.00	4.00	4.00	3.00	4.00	5.00	3.00
Integration with other tools and applications	4.00	4.00	2.00	1.00	4.00	2.00	3.00
Full BI stack	3.00	3.00	5.00	3.00	3.00	3.00	3.00
Mobile	3.00	4.00	3.00	4.00	3.00	3.00	4.00
NLG and NLP	1.00	4.00	3.00	1.00	4.00	4.00	2.00
Security	3.00	3.00	3.00	4.00	3.00	4.00	3.00
Text mining	5.00	1.00	1.00	5.00	1.00	5.00	1.00
Upgrades	4.00	3.00	3.00	3.00	3.00	5.00	3.00

All scores are based on a scale of 0 (weak) to 5 (strong).

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FIGURE 2 Forrester Wave™: Enterprise BI Platforms With Majority On-Premises Deployments, Q3 '17 (Cont.)

	Pyramid Analytics	Qlik	SAP	SAS	Sisense	TIBCO Software	Yellowfin
Strategy	3.45	4.20	3.80	3.35	3.20	3.35	3.55
Focus on BI	5.00	5.00	3.00	3.00	5.00	3.00	5.00
Focus on SaaS/cloud	2.00	2.00	2.00	2.00	4.00	2.00	3.00
R&D and IP creation	4.00	3.00	5.00	4.00	3.00	4.00	4.00
Partners	2.00	4.00	5.00	4.00	1.00	4.00	2.00
Market Presence	1.40	3.40	5.00	4.80	1.40	3.00	1.80
Revenue	1.00	3.00	5.00	5.00	1.00	3.00	1.00
Customer logos	3.00	5.00	5.00	3.00	1.00	3.00	5.00
Presence in all global regions	3.00	5.00	5.00	5.00	5.00	3.00	5.00

All scores are based on a scale of 0 (weak) to 5 (strong).

Leaders

- › **MicroStrategy continues to address all BI use cases at scale.** In contrast to some other BI platforms that purely rely on a DBMS for query processing and optimization, MicroStrategy makes a more realistic assumption that not all DBMSes are well tuned. Its core strength remains a powerful, highly scalable ROLAP, which can optimize queries beyond DBMS capabilities; perform complex heterogeneous joins between multiple DBMSes; and support a drill-anywhere capability, which can reduce the number of siloed reports and dashboards.⁶ MicroStrategy also received one of the best scores in our evaluation's "clicks to answer" exercise. The vendor is also back in the BI business 100%, having recently folded its previously separate mobile application development and digital credentialing products under BI and analytics.
- › **IBM offers a broad and comprehensive BI platform with a touch of AI.** The latest versions of IBM's long-time BI market leader, Cognos Analytics, get a boost of predictive analytics via integration with SPSS and a shot of AI via integration with Watson Analytics. Knowledge gaps (or "I don't know what I don't know") are a significant missed opportunity in many BI environments, and that's precisely what Watson Analytics addresses: It suggests areas of interest for users to discover without them explicitly asking a question. Once users explore these areas, they can turn insight

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into comprehensive descriptive and predictive BI applications using Cognos Analytics and SPSS. IBM's platform is also one of few BI platforms that offer writeback via TM1, which is bundled with its Cognos Analytics suite.

Client references gave IBM high scores for quick time-to-value, scalability, stability, security, cloud/hybrid architecture, extensibility, and frequency of upgrades. However, users will have to deal with three different UIs in IBM's three BI products, and more holistic integration remains a work in progress for IBM.⁷ Additionally, client references expressed concern about difficulty navigating IBM's large and complex organization for sales and support.

- › **TIBCO Software is back as a Leader for full-spectrum data visualization and analytics.** After a brief slowdown due to the company's privatization in 2014 and the associated management and key personnel changes, TIBCO Spotfire is back in the market as a formidable player in full-spectrum analytics, from basic descriptive analytics to advanced data visualization and predictive analytics. Our evaluation gave Spotfire top scores for advanced analytics and ease of use (as per its top customer-reference survey scores and least number of clicks for the "clicks to answer" exercise). Customer references also rated Spotfire highly for quick time-to-value, scalability, data visualization, end user self-service, and cloud/hybrid architecture.

Prospects and customers looking for full BI stack capabilities, however, will prefer Jaspersoft (not evaluated in this report) for mass-scale, pixel-perfect report distribution and for embedded analytics (a key BI market trend).

- › **Qlik continues to differentiate with its powerful associative BI engine.** All BI tools work great when you know how to ask a question and what specific data sources, tables, and columns contain the information you are looking for. What if you don't? This is precisely the sweet spot for Qlik's two products, QlikView and Qlik Sense (its strategic product). In addition to the usual point-and-click UI, Qlik's associative in-memory engine allows users to simply start typing, and anything that matches in its entire in-memory data set is instantaneously highlighted. Such exploratory UI is one reason customer references awarded Qlik one of the highest scores for business value in terms of ROI.

Qlik has few gaps in its BI portfolio — one of the remaining ones is actionable BI, such as support for process workflows and writeback. Client references also suggested that Qlik's advanced/predictive analytics could use additional functionality.

Strong Performers

- › **Information Builders secures its future with an investment from Goldman Sachs.** In a crowded BI market with over 70 vendors, buyers should make vendor viability a key part of the evaluation. Information Builders' prospects and clients can rest easier, based on the latest endorsement by Goldman Sachs taking a sizable position in the company in May 2017. While newer BI vendors are still learning how to deal with massively scalable BI applications, Information Builders has been

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in the big data business for over 30 years. Clients who don't view Information Builders as a viable competitor in predictive analytics should take another look: WebFOCUS offers one of the most advanced features to author, integrate, and deploy predictive BI applications using R.

Client references gave Information Builders top scores for all 25 survey questions — by far the highest number in this evaluation. As a software engineering company at its core, Information Builders still needs to address the overall end user experience with a complex portfolio of BI products and a UI, where the FOCUS programming language sometimes bursts through the seams.

- › **Looker is a modern BI platform not burdened with legacy DBMS inefficiencies.** BI vendors that went into the business decades ago had to architect their platforms to overcome legacy DBMS inefficiencies. Given technology limitations, some of these vendors also had to come up with multiple BI products to address different use cases. Looker doesn't have to deal with these legacy issues and assumes that modern DBMSes are highly efficient and scalable. As a result, it has concentrated its R&D investments into one clean, simple, modern BI platform that addresses most BI use cases. Looker also takes a modern approach to integration: Rather than coding to multiple data and application sources, it relies on emerging integration provider partnerships.⁸ As a result of its modern architecture, Looker achieved one of the best scores in our evaluation's "clicks to answer" exercise.

Client references gave Looker high scores for time-to-value, cloud/hybrid architecture, and professional services and help-desk organizations. As a young company that is still growing, Looker still needs to address multiple gaps in its BI functionality, such as beefing up its predictive, suggestive, prescriptive, geospatial, and mobile analytics capabilities.

- › **Pyramid Analytics rearchitected and goes to market as a general-purpose BI platform.** The latest version of Pyramid Analytics' BI Office product has been completely rearchitected and drops its former dependence on Microsoft's platform. That is not to say that prospects and clients can't continue to use BI Office as an add-on to the Microsoft BI environment to boost Microsoft's on-premises BI administration and distribution (as the majority of Pyramid Analytics' current customers still do). BI Office is a solid choice for buyers looking to deploy a scalable and governed BI platform for most of the typical use cases.

Pyramid Analytics still has multiple gaps to fill in BI Office, such as suggestive BI and new ways to interact with information via natural language processing (NLP) and natural language generation (NLG). The vendor also needs to improve its geospatial analytics capabilities.

- › **Tableau's powerful yet simple data visualization affords it the biggest mindshare.** More features don't necessarily make data analysis and exploration easier. Tableau Software continues to focus on one thing and one thing only: a clean, intuitive, easy-to-navigate UI and insights presentation. This razor-sharp focus earns Tableau Software a top spot in this market: Forrester has few interactions with clients on the topic of BI where clients do not bring up Tableau. Tableau Software was also the first vendor to get an IBCS data visualization certification.⁹

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But the BI market continues to evolve beyond just data visualization, and Tableau is still catching up to the competition on highly popular new features such as actionable/suggestive BI, advanced/predictive analytics, and data preparation — in an upcoming release, it plans to roll out a data preparation tool, Project Maestro, architected based on its recently acquired in-memory DBMS HyPer. On August 9, 2017, the vendor acquired natural language query startup ClearGraph, which will significantly boost Tableau's NLP capabilities.¹⁰ Tableau Software did not participate in this Forrester Wave evaluation.

- › **SAP offers a variety of BI tools that address all possible enterprise use cases.** SAP goes to market with a broad BI portfolio (part of its recently announced digital innovation system, SAP Leonardo) with options to deploy its products on-premises and/or in the cloud. It also addresses all use cases from scalable enterprise reporting to lightweight, user-centric data visualization. SAP has made significant progress in consolidating and integrating over a dozen individual BI products down to four; however, more complete and seamless integration is still a work in progress.

The current SAP BI suite consists of three BusinessObjects and one Analytics Cloud products: Lumira (one of very few products with a prestigious IBCS data visualization award) for dashboards, discovery, and analysis; Analysis Office for analytics using a familiar Excel UI; and Crystal Reports and Web Intelligence for scalable report distribution. Single-tenant BusinessObjects products can be deployed on-premises or hosted on various public cloud platforms. For a native multitenant platform, SAP clients should consider Analytics Cloud.

- › **OpenText tackles big data BI with its Hadoop/Spark-based Magellan platform.** In July 2017 OpenText integrated and packaged BI products acquired over the last few years into a highly scalable big data platform. Rather than buying and using three separate products for reporting (iHub), big data analytics (BDA), and text mining (InfoFusion), customers can get all three functions in a single product.¹¹ OpenText Magellan differentiates from the competition by allowing users to analyze structured and unstructured data in a single package and moving many components to Hadoop and Spark, popular open source software platforms. However, all of the hard work going into Magellan took priority over other popular BI features, and OpenText still needs to build up capabilities such as actionable/suggestive BI and new ways to interact with information via NLP and NLG.

OpenText's legacy focus — mostly on professional BI developers — still shows, and customer references report a high level of reliance on technology pros to complete many of the analytical tasks, which they say can potentially reduce the product's ROI. Part of OpenText Magellan's road map is to address this very issue.

- › **Yellowfin, an embedded BI specialist, is a solid choice for all enterprise BI use cases.** Even though the majority of Yellowfin revenues comes from resellers and OEM partners, the platform supports most typical enterprise BI use cases. As a result, Forrester has seen an increase in Yellowfin's appearance on enterprise BI platform short lists. Customer references like Yellowfin's collaboration and storytelling capabilities.

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While Yellowfin is mainly popular for its modern, clean, easy-to-use, and navigate UI, it struggles with more complex analytical use cases, and as a result it received one of the lowest scores in the evaluation's "clicks to answer" exercise. Client references also gave Yellowfin relatively low scores for advanced/predictive analytics.

- › **Sisense addresses use cases where even in-memory computing is not fast enough.** Analyzing terabytes of detailed data requires smart data architecture based on aggregates, indices, and other SQL optimization techniques. But these take time to design and optimize, and you'll have to start from scratch when data sources, data model, or business requirements change. Sisense's secret ingredient, its core IP, is in the way it moves data between disk, RAM, and CPU, minimizing the number of cycles it takes to move the data beyond what the CPU and operating system can deliver. As a result of this brute-force approach, users can hit the ground running analyzing billions of rows of data without a complex data architecture design process.

Reference clients confirmed the uniqueness of Sisense's on-CPU architecture, and they gave the vendor some of the highest scores for low latency when slicing and dicing especially large data sets. Sisense is a young company and still has much catching up to do. Some of the gaps in its current product functionality include actionable/suggestive BI, data profiling, and data cataloging. Sisense also needs to beef up its geospatial analytics, such as automatic geocoding of relevant attributes.

- › **SAS bets on in memory computing with its Viya-based Visual Analytics.** While some competitors rely on the scalability of modern DBMSes, SAS bets that no DBMS is scalable enough for big data analytics. Its Visual Analytics (VA) is based on SAS's Viya platform — in-memory, cloud-ready, elastic data grid — and it can optimize real-time data visualization, analysis, discovery, and exploration regardless of the performance of the source DBMS. While SAS VA is the vendor's strategic BI product going forward, SAS plans to maintain its other BI products, such as enterprise BI, to support existing customers.

Areas of improvement for SAS VA include developing its data preparation, profiling, cataloging, and geospatial analytics capabilities (some of the reasons SAS VA scored low on the "clicks to answer" exercise) as well as introducing net-new features such as suggestive BI and NLP/NLG as new ways to interact with information.

Contenders

- › **BOARD International is a solid choice for companies looking for BI and EPM together.** Slowly but surely, BI applications are migrating from data-centric, read-only applications to process-centric, read-and-write applications — and BOARD International is riding this trend. In addition to all of the typical BI functions, the platform supports all of the enterprise process management (EPM) functions, including budgeting, planning, approvals, and writeback, all packaged in a unified seamlessly integrated platform.

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Rich process functionality comes at an expense, and BOARD falls behind the competition on innovations such as suggestive BI and interacting with applications via NLP and NLG. BOARD is also working on improving its data preparation, data profiling, and automated geocoding functionality, which were reflected in the vendor's ease-of-use scores.

- › **Panorama holds the course with collaborative BI.** Democratizing data and insights doesn't necessarily negate the benefits of tribal knowledge. BI users still look for their colleagues for recommendations on what are the best reports or dashboards for a particular task. Panorama's differentiated recommendation engine helps users get the right insight within the right context at the right time. Rather than showing a blank screen and making you guess what to do, Panorama Necto's machine-learning-based recommendation engine nudges you in the right direction by showing you the most popular content as tagged and ranked by your colleagues.

Panorama Necto is a general-purpose BI platform, applicable to most use cases. However, most clients use Necto as an add-on to the Microsoft BI environment to boost Microsoft's on-premises BI administration, distribution, and collaboration capabilities. Panorama is still working on filling in multiple gaps in its BI platform, such as embedded advanced/predictive analytics, data preparation, and data profiling.

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Supplemental Material

Online Resource

The online version of Figure 2 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings. Click the link at [Forrester.com](#) at the beginning of this report to download.

Data Sources Used In This Forrester Wave

Forrester used a combination of two data sources to assess the strengths and weaknesses of each solution. We evaluated the vendors participating in this Forrester Wave, in part, using materials that they provided to us by August 28, 2017, or prior.

- › **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.

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- › **Product demos.** We asked vendors to conduct demonstrations of their products' functionality. We used findings from these product demos to validate details of each vendor's product capabilities.

The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria for evaluation in this market. From that initial pool of vendors, we narrow our final list. We choose these vendors based on 1) product fit, 2) customer success, and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave evaluation — and then score the vendors based on a clearly defined scale. We intend these default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve. For more information on the methodology that every Forrester Wave follows, please visit [The Forrester Wave™ Methodology Guide](#) on our website.

Integrity Policy

We conduct all our research, including Forrester Wave evaluations, in accordance with the [Integrity Policy](#) posted on our website.

Endnotes

- ¹ See the Forrester report "[The Insights-Driven Business.](#)"
- ² For more information on predictive analytics, see the Forrester report "[The Forrester Wave™: Predictive Analytics And Machine Learning Solutions, Q1 2017.](#)" For more information on prescriptive analytics, see the Forrester report "[Prescriptive Analytics: The Black Belt Of Digital Decisions.](#)"
- ³ In 2015, Forrester defined three segments of the BI platform market: agile BI platforms, enterprise BI platforms, and cloud BI platforms. See the Forrester report "[The Forrester Wave™: Agile Business Intelligence Platforms, Q3 2015;](#)" see the Forrester report "[The Forrester Wave™: Enterprise Business Intelligence Platforms, Q1 2015;](#)" and see the Forrester report "[The Forrester Wave™: Cloud Business Intelligence Platforms, Q4 2015.](#)"
- ⁴ See the Forrester report "[The Forrester Wave™: Advanced Data Visualization \(ADV\) Platforms, Q3 2012.](#)"
- ⁵ SaaS: software-as-a-service.

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⁶ ROLAP: relational online analytical processing.

⁷ The entire suite of analytical products lends IBM recognition in a recent evaluation. See the “[The Forrester Wave™: Insight Platforms-As-A-Service, Q3 2017.](#)”

⁸ Representative vendors include Fivetran, Segment, and Stitch.

⁹ Source: “Tableau Awarded Hichert IBCS Certification for International Business Communications Standards,” Tableau Software press release, February 3, 2015 (<https://www.tableau.com/about/press-releases/2015/tableau-awarded-hichertribcs-certification-international-business>).

¹⁰ Source: “Tableau Acquires Natural Language Query Startup ClearGraph,” Tableau Software press release, August 9, 2017 (<https://www.tableau.com/about/press-releases/2017/tableau-acquires-natural-language-query-startup-cleargraph>).

¹¹ All three products are also available for purchase separately.

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